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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Johan Ulin

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EXAMINER

WHITE, DENNIS MICHAEL

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

12/08/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,045	Applicant(s) ULIN ET AL.	
	Examiner DENNIS M. WHITE	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 15-21, 23-29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Commarmot et al (USP 4,693,867) in view of Jennings (US 2002/0101310).

Regarding claims 15, 27-28, Commarmot et al teach a container 12 ("micro vial") assembly for performing microwave-assisted chemical reactions, the assemble comprising: a container 12 made of glass ("a micro-wave transparent reaction vessel having an open upper end and a closed bottom end"); a cover 90 ("cap") having a tube 95 ("through hole"), wherein two half-shells 86 ("a sleeve") is formed with a through hole, the container 12 ("vessel") extending axially through the two half-shells 86 ("sleeve") and the cover 90 ("cap") securing the vessel to the sleeve while clamping, the open upper end of the vessel being formed with a widening portion, the widening portion being received in a corresponding recess formed in an end plane of the sleeve, the recess providing a seat for the widening portion in the open upper end of the vessel (see Fig. 14 below). The container is fully capable of containing small volumes. Commarmot et al is silent about a sealing diaphragm and wherein the sealing diaphragm is elastic.

Jennings teaches a microwave assisted chemical synthesis instrument comprising a reaction vessel 105 and a collet assembly 91. The reaction vessel and collet are sealed by a septum 134. The septum 134 is made of a material, preferably an appropriate polymer or silicone related material, that can be penetrated by the needle

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115, but which will surround and seal against the needle 115 even after penetration, thus maintaining the pressure integrity of the vessel 105 ("elastic") (Para. 0072-0076).

Jennings teaches it is desirable to provide a microwave-assisted chemistry system capable of proceeding at increased pressure because reactions proceed more favorably under this increased pressure.

Combining prior art elements according to known methods to yield predictable results is known. Therefore it would have been obvious to one of ordinary skill in the art as motivated by Jennings to combine the septum ("sealing elastic diaphragm") of Jennings in the device of Commarmot et al in order to provide a seal in order to generate a high pressure environment to better favor chemical reactions to proceed.

Regarding claim 16, Commarmot/Jennings teach the upper end of the two half-shells 86 ("a sleeve") is formed circumferentially for engagement with the cap, the sleeve having a first diameter portion running from the upper end to meet a reduced diameter portion in the lower end of the sleeve (see Fig. 14 above).

Regarding claim 17, Commarmot/Jennings teach the portion of reduced diameter in the lower end of the sleeve is a truncated cone.

Regarding claim 18, Commarmot/Jennings teach the widening portion of the vessel and the seat in the end plane of the sleeve are both conical in shape.

Regarding claim 19, Commarmot/Jennings teach the open end of the vessel is defined by a rim protruding above where the shoulder and flange of the half shells begin ("upper end of the sleeve" is defined in applicant's specification in Para 0025 as where the first diameter begins, which is also where the seat 24 and flange 25 begin), when

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the vessel is supported in the sleeve, the rim being dimensioned to be depressed in the lower side of the diaphragm.

Regarding claims 20-21, Commarmot/Jennings the container has a rim that extends to the diaphragm, sealing the open end of the vessel wherein a reducing radius portion smoothly transforming into a portion of continuous radius defining a reaction chamber of the verse cavity. Commarmot further shows container 12 wherein the upper rim extends transversely (see Fig. 8 below).

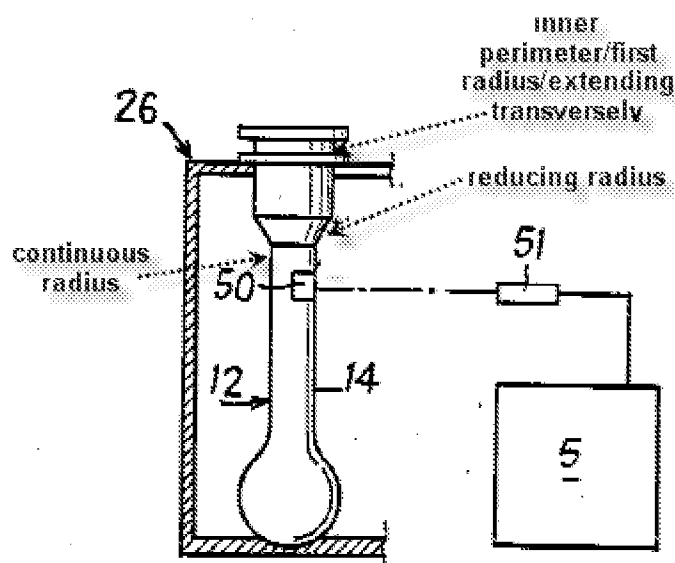


Fig. 8

Regarding claims 23-25, Commarmot/Jennings teach the vessel has an inner volume. The inner volume is fully capable of including a head-space volume which is less than 20 times that of the smallest reaction mixture volume contained in the vessel, for performing microwave-assisted chemical reactions on small volumes of 500 μl or

less, and for performing microwave assisted chemical reactions on small reaction mixture volumes

Regarding claim 26, Commarmot/Jennings teach the outer perimeter of the sleeve is dimensioned for bridging the radial distance between a wall of the vessel and an entrance diameter, of a microwave cavity in the system.

3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Commarmot et al (USP 4,693,867) in view of Bennett et al (USP 5,520,886).

Commarmot et al teach the limitations of claim 15 as per above.

Regarding claim 22, Commarmot et al teach the bottom of the container 12 can be generally semi-spherical in form or have a flat bottom if the container is of the ordinary tubular type or in the form of a bulb in the case of a flask. Commarmot is silent about the bottom located above the terminal end of the vessel.

Bennett et al teach sealable container assemblies include containers for materials which are to be microwave heated. The bottom of the reaction vessel is formed above the terminal end of skirt 31. It is desirable to form the bottom above the terminal end of the container to provide a skirt that avoids dangerous explosions by allows for a more gradual failure of the container. The skirt also allows the container to stand upright on its own when the bottom is rounded.

Therefore it would have been obvious to one of ordinary skill in the art as motivated by Bennett et al to form the bottom of the reaction vessel of Commarmot et al above the terminal end of the skirt as in Bennett et al because the skirt facilitates distortion downwardly of the container bottom and thereby promotes a more gradual

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failure of the container and slower release of contents during high pressures (col. 3 lines 40-47).

For Claim 22, it is noted that this claim contains product-by-process language. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process, consult *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In this case the bottom of the reaction vessel of Commarmot/Bennett seems similar to those instantly claimed.

Therefore, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product, consult *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

Response to Arguments

4. Applicant's arguments filed 7/28/2009 have been fully considered but they are not persuasive.

5. Applicants argue that Commarmot in view of Jennings do not teach the cap securing the vessel to the sleeve while clamping the diaphragm for sealing the open upper end of the vessel. It is noted that "the cap securing...while clamping" is functional language that is sufficiently broad to read on the cap securing the opening of the vessel by abutting the vessel. In the absence of positively claiming a clamp, the motion of the cap to seal the septum meets the claimed limitations.

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6. Applicants argue that the combination of Commarmot in view of Jennings is not proper because there has not been an "explicit rationale" but a merely conclusory statement. It is noted that the motivation is provided in Jennings as to the desire to provide a septum that would provide a seal with an opening in order to contain the high pressures needed to better favor chemical reactions to proceed. Therefore the combination is proper.

7. Applicants argue that Commarmot teaches away from a sealing diaphragm. It is noted that the sealing diaphragm of Jennings is provided with an outlet that does not keep the fumes locked inside and furthermore attains the desirable feature of sealing the vessel so that the pressure inside the vessel is controlled and avoids losing vapors to the cap/vessel interface.

8. Applicants argue that to introduce a septum in the device according to Commarmot is to replace the vessel (14) of Commarmot with the vessel (105) of Jennings. However, there is no teaching, suggestion or motivation in either document to use a cap to clamp together the vessel, diaphragm and the sleeve into one single unit and the sleeve of Commarmot is already clamped by jaws (82) and it is not obvious how further clamping means should be introduced. It is noted that the arguments are not in scope with the claims since no clamping means are claimed. The claims require that the "cap secure the vessel to the sleeve and clamps the diaphragm for sealing the open upper end of the vessel" which is met by Commarmot with the septum of Jennings introduced at the interface of the vessel and the cap.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS M. WHITE whose telephone number is (571)270-3747. The examiner can normally be reached on Monday-Thursday, EST 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LYLE A ALEXANDER/
Primary Examiner, Art Unit 1797

/dmw/